

REMARKS

In response to the Office Action mailed April 8, 2004, Applicants amend their application and request reconsideration. Claim 14 is cancelled leaving claims 15-18 pending.

Claim 18 is amended to eliminate redundant language in the preamble.

Applicants express appreciation for the courtesy of an interview granted to their representatives on May 12, 2004. The issue discussed below was discussed at the interview, but no agreement was reached.

In this Amendment the word "physical" is added to each of the two remaining independent claims, claims 15 and 17. That adjective "physical" modifies the word "contact". However, Applicants believe that no such additional amendment is needed to distinguish from the prior art or to explain further the meaning of the claims, based upon the claims previously presented and described in the remarks of the Amendment filed January 8, 2004.

The subject matter of this patent application has been repeatedly discussed. The invention is directed to a vaporizing device and a chemical vapor deposition apparatus. Many of the elements of the two remaining independent claims, claims 15 and 17, are similar. Among those elements is a cooling block, described as "in contact with and surrounding the spray nozzle for *conducting* heat from and cooling the spray nozzle".

Claims 15 and 17 were rejected as unpatentable over Li et al. (U.S. Patent 5,835,677, hereinafter Li) in view of Zhao et al. (U.S. Patent 6,210,458, hereinafter Zhao). This rejection is again respectfully traversed.

In the Office Action of April 8, 2004, the Examiner replied, at page 5, to the Applicants' argument that "that the cooling jacket 26 of Li is not in direct contact with Li's nozzle 24. It is noted, however that claims 15 and 17 do not recite that the cooling block is in direct physical contact as argued by applicants." The Examiner continued that the cooling jacket of Li is in *thermal* contact with the nozzle because of radiative cooling. It is Applicants' view that the Examiner has made an overly broad interpretation of the cited claim language and has not given full credit to all of the claim language. An unnecessary amendment is proposed here to overcome the rejection. If the Examiner now agrees that this additional amendment is unnecessary to allowance of the remaining claims, Applicants will withdraw the amendment to claims 15 and 17, while still canceling claim 14, in order to place the application in form for allowance.

The Examiner's interpretation of the cited claim language is inappropriate because of the claim language itself. The passage in each of claims 15 and 17 of interest provides

“a cooling block in contact with and surrounding the spray nozzle for **conducting** heat from and cooling the spray nozzle”. Insufficient attention was given to the word “conducting” in the rejection of claims 15-18. The Examiner took the expansive view that radiative cooling in Li would meet the limitation of the claims. However, it is apparent that the radiative cooling in Li cannot meet the limitations of the claims.

It is almost too fundamental to state that, according to conventional thermodynamics, heat can be transferred from one location to another location by three difference mechanisms: conduction, convection, and radiation. The art recognizes the very different mechanisms involved in each of these three heat transfer processes by giving them different names. Applicants relied upon that fundamental knowledge in the language of the rejected claims by specifying not only contact between the cooling block and the spray nozzle but also explaining that the contact conducts heat. The standard teaching in the thermodynamic arts is that heat transfer by conduction occurs because of direct physical contact between two bodies, one body being warmer than the other and transferring heat to the cooler body. Considering all of this claim language, it clearly was error to apply Li as applied in the rejection, for the proposition that Li teaches a “similar” heat transfer arrangement, when Li, as admitted in the Office Action, only provides for radiative transfer between a putative cooling block and nozzle, not for heat conduction. On that basis, upon reconsideration, the rejection should be withdrawn and the remaining four claims allowed.

At the interview, Applicants’ representative presented a dictionary definition of the word “contact”, a copy of which is attached. This dictionary definition is taken from “The American Heritage Dictionary” (1976). The primary definition of the word “contact” is “The coming together or touching of two objects or surfaces.” The language of the two independent claims, claims 15 and 17, regarding the “contact” between the cooling block and the spray nozzle should have been given the principal meaning of that word, i.e., physical contact, since there was no special meaning attributed to that word. If Applicants had intended to qualify the term “contact”, i.e., to give that word a meaning different from its ordinary meaning, then it would have been incumbent upon the Applicants to use a different term or to provide an explanation of the special meaning. In other words, if Applicants had intended the word “contact” to be interpreted to mean “thermal contact”, possibly excluding physical contact, then the Applicants would have to have modified the claim language. Since there was no such modification, the term “contact” should have been given its ordinary meaning in interpreting the scope of claims 15 and 17. When the Examiner interpreted “contact” to mean “thermal” contact, the proper rules of claim interpretation were not followed.

Further, defining any two physical elements as being “in thermal contact” is not structurally limiting. In the broadest thermodynamic sense, every element of the universe is in thermal contact, i.e., thermal exchange, with every other element in the universe. The amount of heat transfer may be miniscule between any two such elements, for example, between the earth and a remote star, but some transfer can be inferred if light is received from the star. However, there is no meaningful energy transfer of any kind. Thus, “thermal” contact has no meaning and does not describe the true relationship of the earth and star. This kind of limitless interpretation has been placed on the cited claim language, and is clearly contrary to the Applicants’ intention and the disclosure. The claim interpretation is erroneous and, upon reconsideration, the rejection based on this interpretation should be withdrawn.

Finally, in this Amendment the word “physical” is added to claim 15 to describe the contact between the cooling block and the nozzle. This word is chosen based upon the comment in the Office Action. As already stated, the addition of this word is redundant and unnecessary in the claims because of the description of heat *conduction* between the cooling block and the spray nozzle. Nevertheless, this Amendment is proposed based upon the discussion at the interview and the Office Action. Because of the redundancy of this proposed Amendment, the Amendment is clearly non-substantive and therefore cannot raise any new issues. Further, to repeat, if claims 15-18 will be allowed without the amendment of claims 15 and 17, Applicants will withdraw the proposed amendment of claims 15 and 17.

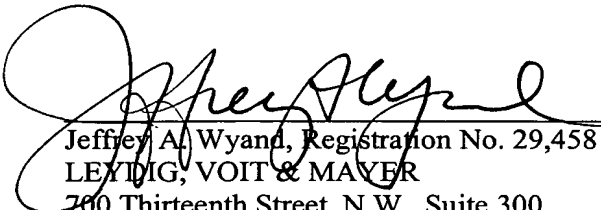
Claims 15-18 were also rejected for obviousness-type double patenting in view of U.S. Patent 6,273,957. In order to eliminate further issues in the prosecution of this patent application and to expedite allowance, Applicants now supply a Terminal Disclaimer and the requisite fee, overcoming the double patenting rejection.

Reconsideration, entry of the foregoing amendment, at least with respect to the cancellation of claim 14 and the entry of the Terminal Disclaimer, to place the application

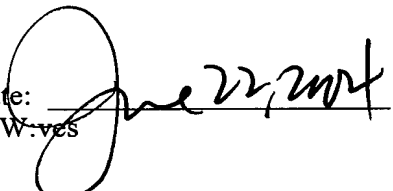
In re Appln. of MATSUNO et al.
Application No. 09/899,183

in form for allowance, and allowance of claims 15-18, as previously pending or as amended here, are earnestly solicited.

Respectfully submitted,



Jeffrey A. Wyand, Registration No. 29,458
LEYDIG, VOIT & MAVER
700 Thirteenth Street, N.W., Suite 300
Washington, DC 20005-3960
(202) 737-6770 (telephone)
(202) 737-6776 (facsimile)

Date: 
JAW:ves

